

Application No.: 10/701,045  
Reply to Office Action of May 13, 2005

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

Cancel claims 1-4.

5. (currently amended) A- An amplifier circuit having a transistor for amplifying a radio frequency signal fed thereto, such amplified signal being coupled to a load, such amplifier comprising:

(A) a circuit for determining temperature of the transistor an active semiconductor device, comprising:

(Aa) a semiconductor substrate having thereon the transistor active device;

(Ab) a bridge circuit comprising:

(i) a first thermal sensitive device disposed in thermal contact with an electrode of the transistor active device, such first thermal sensitive device having a pair of terminals, a first one of the pair of terminals being connected to a first node and a second one of the pair of terminals being connected to a second node;

(ii) a second thermal sensitive device disposed in thermal contact with the electrode of the transistor active device, such second thermal sensitive device having a pair of terminals, a first one of the pair of terminals being connected to a third node and a second one of the pair of terminals being connected to a fourth node;

(iii) a third thermal sensitive device disposed in thermal contact with the substrate, such third thermal sensitive device having a pair of terminals, a first one of the pair of terminals being connected to the second node and a

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second one of the pair of terminals being connected to the fourth node;

(iv) a fourth thermal sensitive device disposed in thermal contact with the substrate, such fourth thermal sensitive device having a pair of terminals, a first one of the pair of terminals being connected to the first node and a second one of the pair of terminals being connected to the third node;

(v) a voltage source providing a voltage potential connected between the first node and the fourth node;

(vi) an output provided by the second node and the third node;

(B) a tuning circuit coupled between an output electrode of the transistor and the load, such tuning circuit having a tunable element controlled by a control signal fed to such tunable element;

(C) an electrical device coupled between the voltage source and the transistor for providing a measure of power fed to the transistor; and

(D) a processor coupled to the electrical device and to output provided by the second node and the third node for producing the control signal.

Cancel claims 6-10.

11. (currently amended) The amplifier recited in claim 5 wherein A circuit for determining temperature of an active semiconductor device, comprising:

(A) a semiconductor substrate having thereon the active device;

(B) a Wheatstone bridge circuit having in each of four branches thereof a thermal sensitive device, one pair of such thermal sensitive devices being in thermal contact with an electrode of the active device;

wherein the thermal sensitive devices are resistors;

wherein the active device is a transistor; and

including a tuning circuit coupled to an output of the transistor, such tuning circuit having a tunable element controlled by a control signal fed to such tunable element.

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Cancel claim 12.

13. (currently amended) The circuit recited in claim ~~5~~12 wherein the output provided by the ~~Wheatstone bridge~~ provides a measure of a temperature difference between the temperature of the transistor and ambient temperature.

14. (currently amended) The circuit recited in claim ~~13~~5 wherein the processor produces the control signal to maximize power fed to the transistor and minimize power dissipated by such transistor.

Cancel claim 15 - 21.

22. (NEW) The circuit recited in claim 5 wherein the electrical device is a resistor.